Activity 3: Build a Chatbot using Wit.ai

1. CHOOSE API(s)

Note: Usually, before developing a chatbot, you should find appropriate API(s) that will allow your bot to deliver its functionalities. In this activity, we use OpenWeatherMap API.

1) Goto https://openweathermap.org/, signup and login to get an API Key. If your API key doesn't work, you can use any of the following keys for this activity.

```
-  4c0f057033a13c262294b557eecdc74d
-  643ba431b7f8bf7eec9a6580be700965
-  b3db28ec921c84ce754e936876c8bb55
-  afbaf3ffc1fbf7b4cef0276f736f03d1
```

2) Goto https://openweathermap.org/current, copy the endpoint in "By city name" and paste in Postman, the endpoint should be something like this:

   https://samples.openweathermap.org/data/2.5/weather?q=London,uk&appid=<your_API_key>

3) Replace **appid** with your API Key and **q** with a name of a city (e.g. London), then call the endpoint. Check the output, it's the current weather condition of the city you entered.

2. TRAINING TASK

A) Creating an Intent

1) Goto https://wit.ai and sign in with your GitHub or Facebook account.
2) From top right corner select + to create a new App.
3) In the next page enter the app name "WeatherApp" and click on Create button. This app covers questions about weather condition.
4) When that process finishes, **Understanding** page will be shown. In this page you are asked to train the bot by entering sentences.
5) Add at least five sentences that you expect a user will ask; for example:
   "What is the weather like in Sydney"
   IMPORTANT:
   - For the first sentence, after typing the sentence, click on "**+ Add a new entity**" and choose **intent**, when the intent is added, click on "**Select a value**" and add "**GetWeatherInformation**", then click on "**Create new value…**". Next, highlight the word that is a name of a city (e.g. Sydney), then click on "**+ Create an entity for…**" and choose "**wit/location**". At last, click on Validate.
   - For next sentences, after typing a sentence, if the system does not recognise the intent (**GetWeatherInformation**) then click on "**+ Add a new entity**" and choose intent, when the intent is added, click on "**Select a value**" and choose "**GetWeatherInformation**". If the system does not highlight the city name in your sentence, then highlight the word and click on "**+ Create an entity for…**" and choose "**wit/location**". After entering and annotating at least 5 sentences, click on Validate (green button) to train the bot.

B) Querying your app for GetWeatherInformation intent

1) Go to the Settings tab. Type an example like “What is the weather like in X?” in the curl box (choose something different than the sentences you have trained your bot with). Then copy the curl command and try it in your terminal.
2) The other way to see the output is to open the Postman and call the endpoint from there.

3. BACKEND TASK - Build Webhook server

A) Make a REST Server

1) Goto https://editor.swagger.io to make the swagger specs by defining an endpoint (e.g. /weather?expression=”your_query”) for your webhook server
2) Generate the code from the swagger doc (Learned in tutorial 1)
3) Add/Edit weather function (e.g. weather.py file):
    a. Code to get the **expression** parameter from endpoint,
    b. Send the value of **expression** parameter to wit.ai endpoint (TRAINING TASK - Section B).
    c. Parse the JSON result from wit.ai and get the value of *location* entity
    d. Call the OpenWeatherMap API by replacing **q** parameter with the value of *location* entity.
    e. Parse the JSON result from OpenWeatherMap API and get the value of *description* key inside the *weather* key.
    f. Return a text like “We have {description} in {location}”.
4) For example, the weather function (if you use python) can be something like this:

```
result = requests.get('https://api.wit.ai/message?v=20180711&q={}'.format(expression),
                      headers={'Authorization': 'Bearer xxx'})
jsonResult = result.json()
if jsonResult['entities']['intent'][0]['value'] == 'GetWeatherInformation':
    location = jsonResult['entities']['location'][0]['value']

weatherCondition = getOpenWeatherMap(location)

reply = "We have {} in {}".format(weatherCondition, location)

return reply, 200, None
```